0030340 - 050505

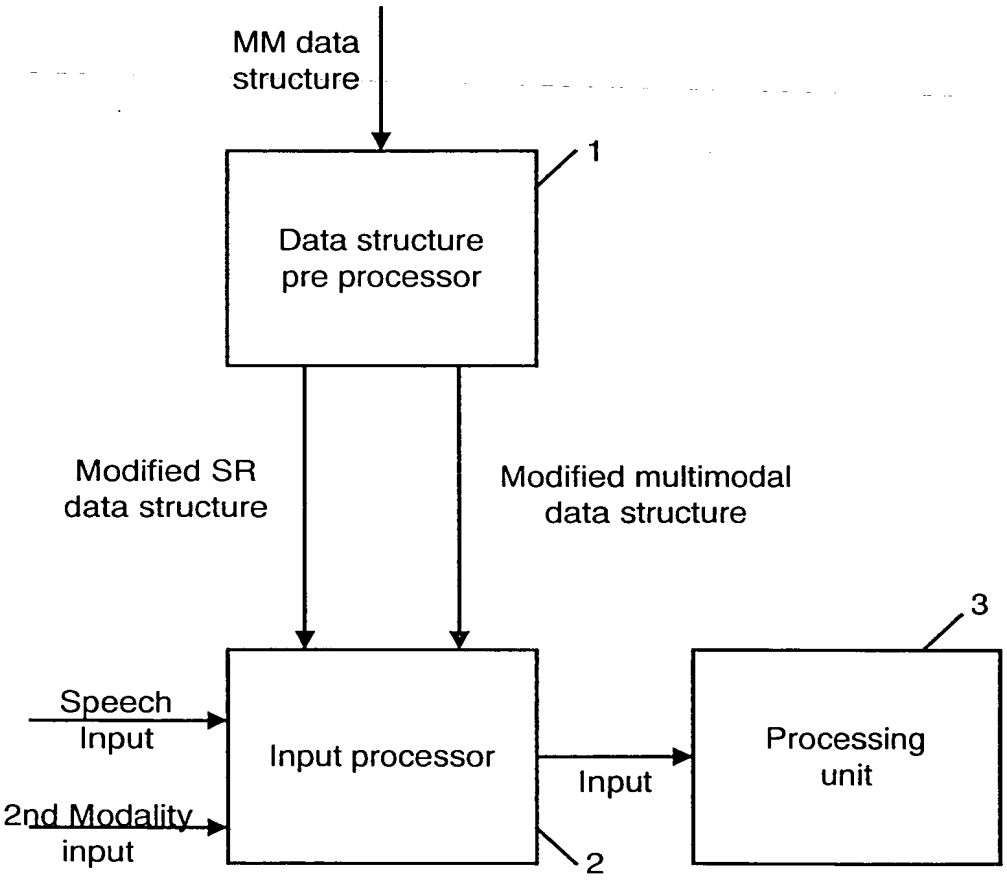
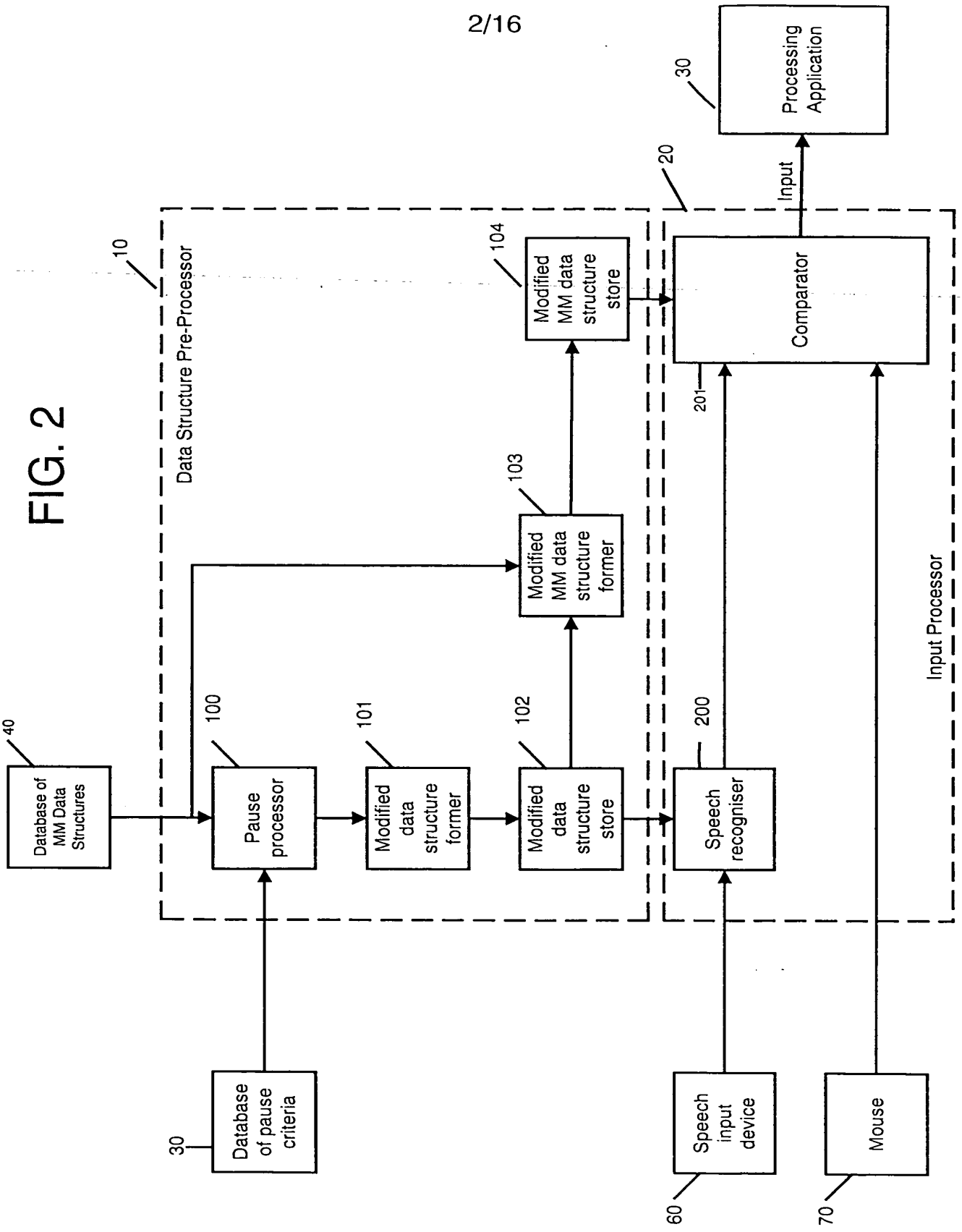


FIG. 1

FIG. 2


Processing Application
30
Input
20
Data Structure Pre-Processor
10
104
Modified MM data structure store
Comparator
201
103
Modified MM data structure former
Input Processor
40
Database of MM Data Structures
100
Pause processor
101
Modified data structure former
102
Modified data structure store
200
Speech recogniser
30
Database of pause criteria
Speech input device
60
Mouse
70

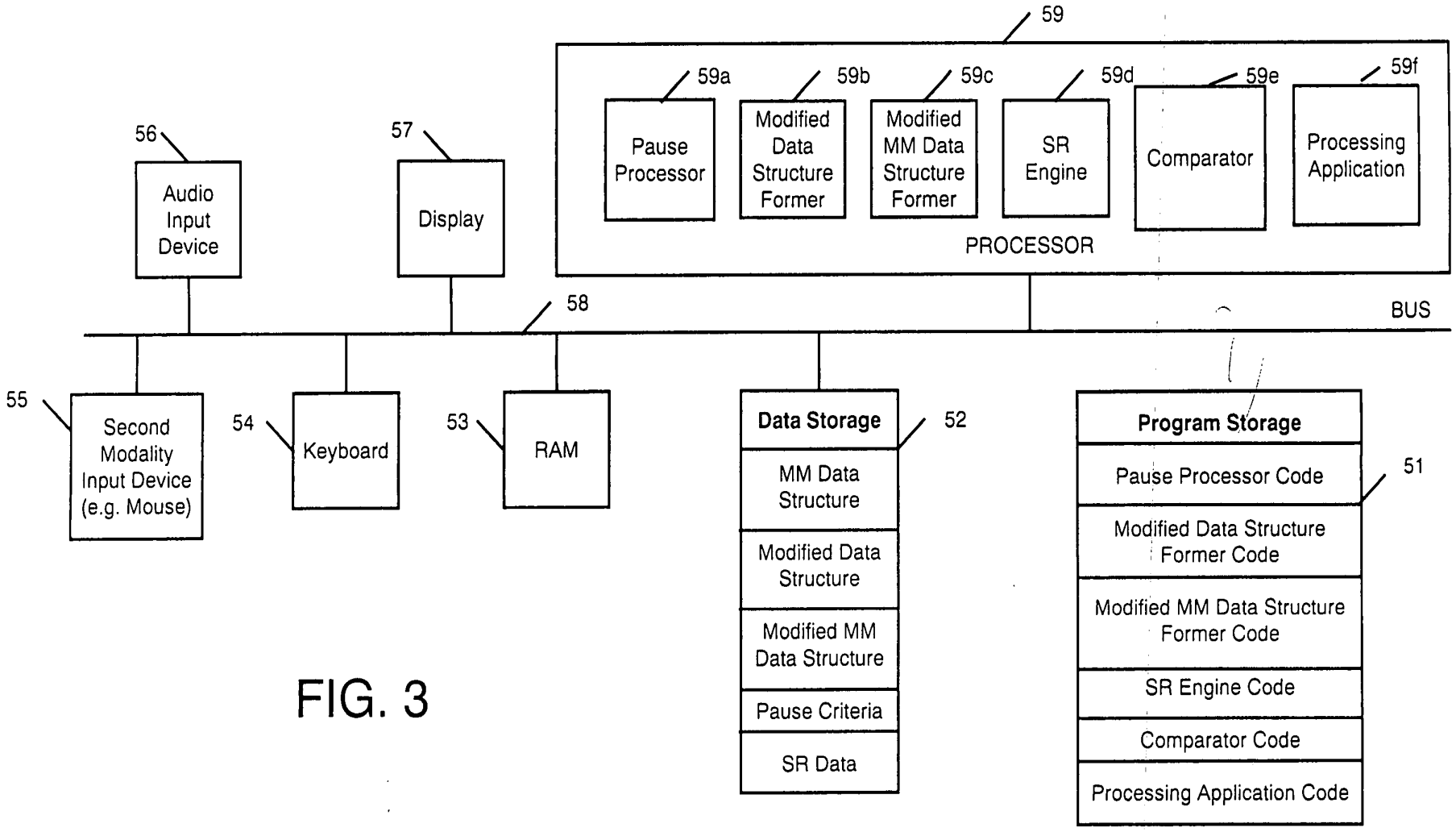

59
59a
59b
59c
59d
59e
59f
Pause Processor
Modified Data Structure Former
Modified MM Data Structure Former
SR Engine
Comparator
Processing Application
PROCESSOR
56
Audio Input Device
57
Display
58
BUS
55
Second Modality Input Device (e.g. Mouse)
54
Keyboard
53
RAM
Data Storage
52
MM Data Structure
Modified Data Structure
Modified MM Data Structure
Pause Criteria
SR Data
Program Storage
51
Pause Processor Code
Modified Data Structure Former Code
Modified MM Data Structure Former Code
SR Engine Code
Comparator Code
Processing Application Code

FIG. 3

DOCKET NO: 5150-0004

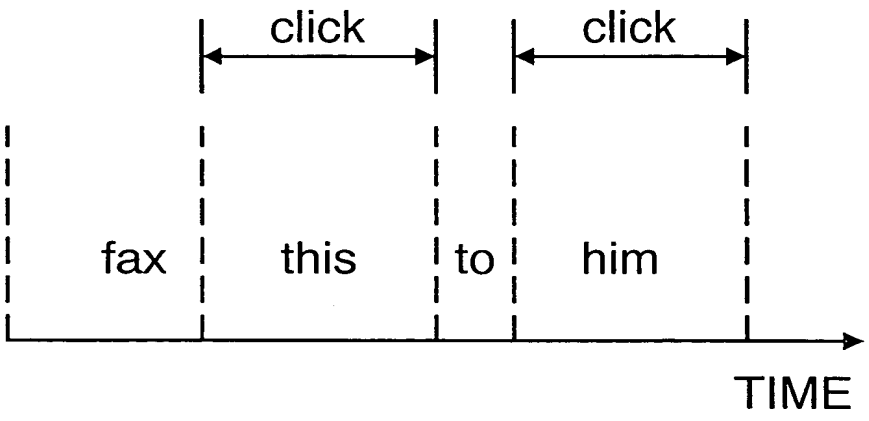


FIG. 4

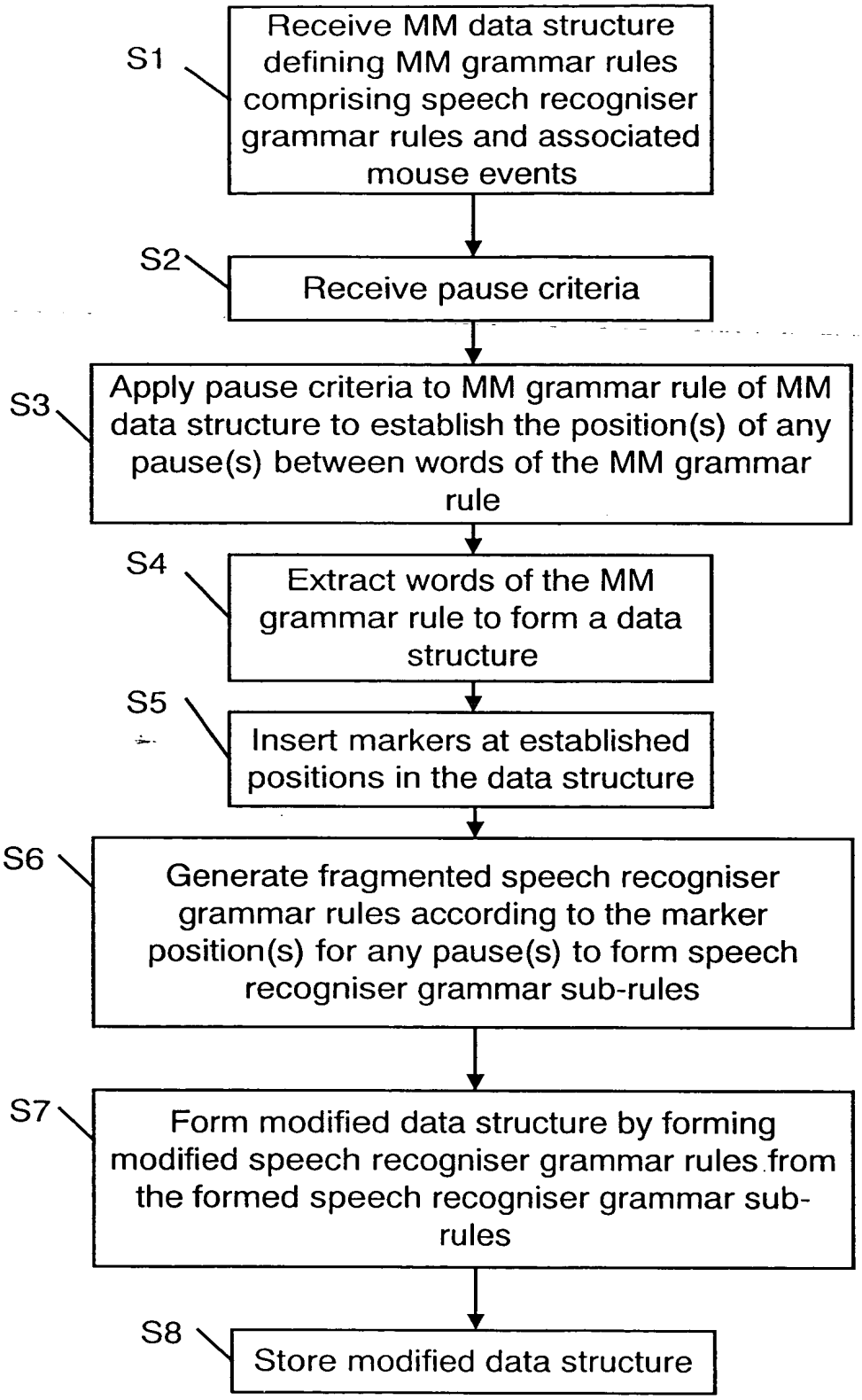


FIG 5

09/955,710 - 09/955,710

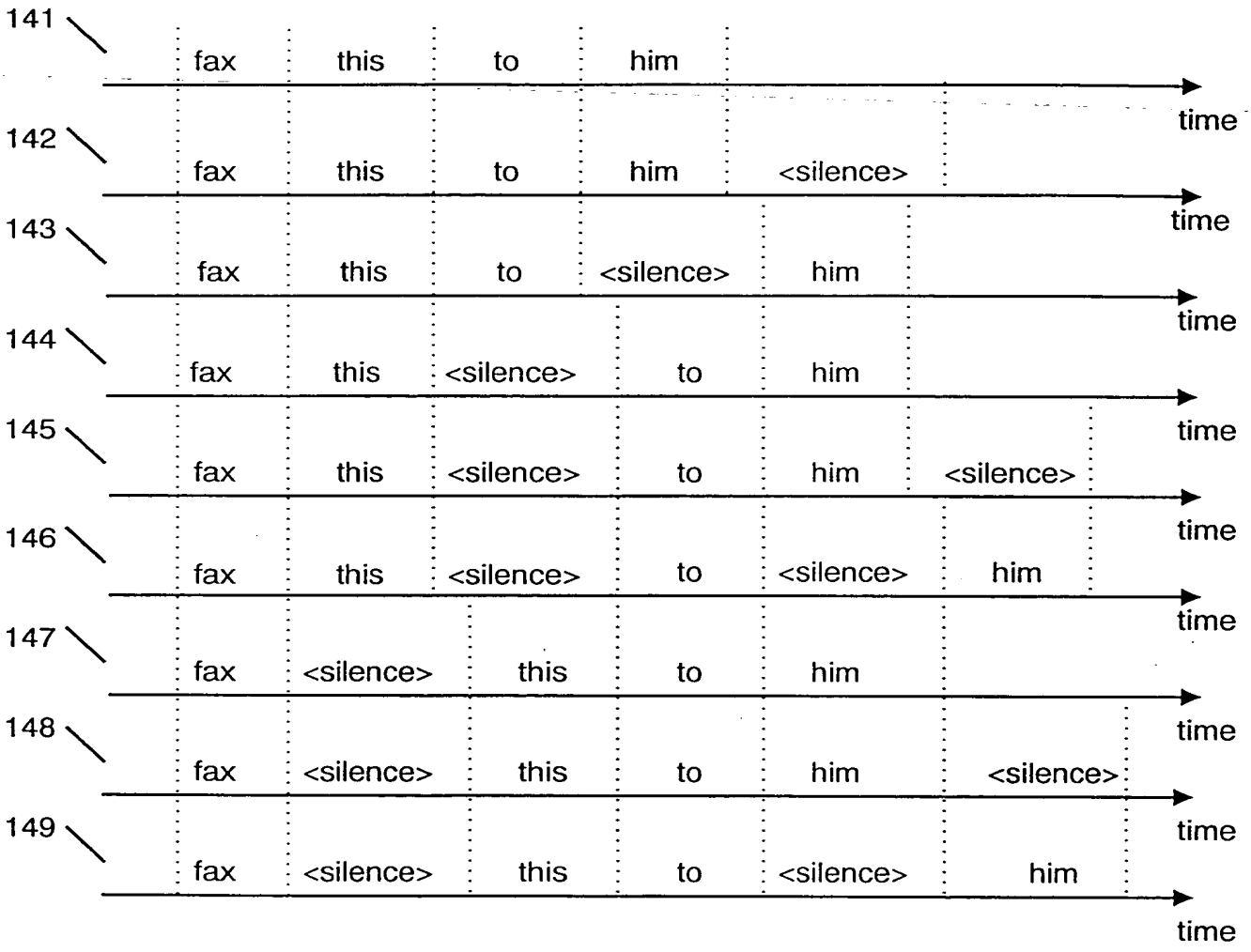

141
fax this to him
time
142
fax this to him <silence>
time
143
fax this to <silence> him
time
144
fax this <silence> to him
time
145
fax this <silence> to him <silence>
time
146
fax this <silence> to <silence> him
time
147
fax <silence> this to him
time
148
fax <silence> this to him <silence>
time
149
fax <silence> this to <silence> him
time

FIG. 6

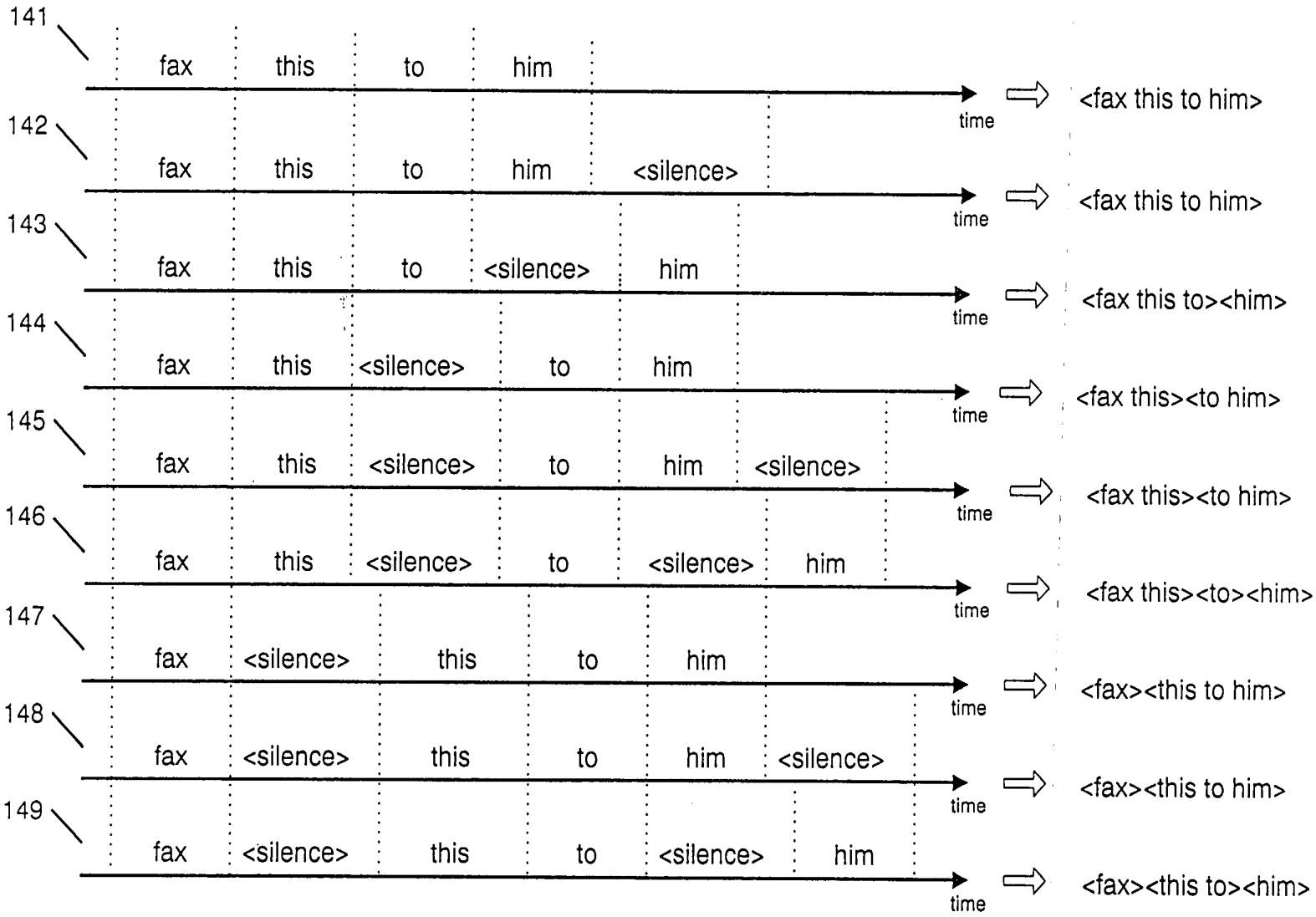

141
fax this to him
time
<fax this to him>
142
fax this to him <silence>
time
<fax this to him>
143
fax this to <silence> him
time
<fax this to><him>
144
fax this <silence> to him
time
<fax this><to him>
145
fax this <silence> to him <silence>
time
<fax this><to him>
146
fax this <silence> to <silence> him
time
<fax this><to><him>
147
fax <silence> this to him
time
<fax><this to him>
148
fax <silence> this to him <silence>
time
<fax><this to him>
149
fax <silence> this to <silence> him
time
<fax><this to><him>

FIG. 7a

<SR Sub-Rule 1>	=	<fax this to him>
<SR Sub-Rule 2>	=	<fax this to>
<SR Sub-Rule 3>	=	<him>
<SR Sub-Rule 4>	=	<fax this>
<SR Sub-Rule 5>	=	<to him>
<SR Sub-Rule 6>	=	<to>
<SR Sub-Rule 7>	=	<fax>
<SR Sub-Rule 8>	=	<this to him>
<SR Sub-Rule 9>	=	<this to>

FIG. 7b

<Modified SR Fax Rule> =

<SR sub-rule 1>

| <SR sub-rule 2> <SR sub-rule 3>

| <SR sub-rule 4> <SR sub-rule 5>

| <SR sub-rule 4> <SR sub-rule 6> <SR sub-rule 3>

| <SR sub-rule 7> <SR sub-rule 8>

| <SR sub-rule 7> <SR sub-rule 9> <SR sub-rule 3>

FIG. 8a

<Modified SR Fax Rule> =

<SR sub-rule 1>

| <SR sub-rule 2> <SR sub-rule 3>

| <SR sub-rule 4> (<SR sub-rule 5> | (<SR sub-rule 6> <SR sub-rule 3>))

| <SR sub-rule 7> (<SR sub-rule 8> | (<SR sub-rule 9> <SR sub-rule 3>))

FIG. 8b

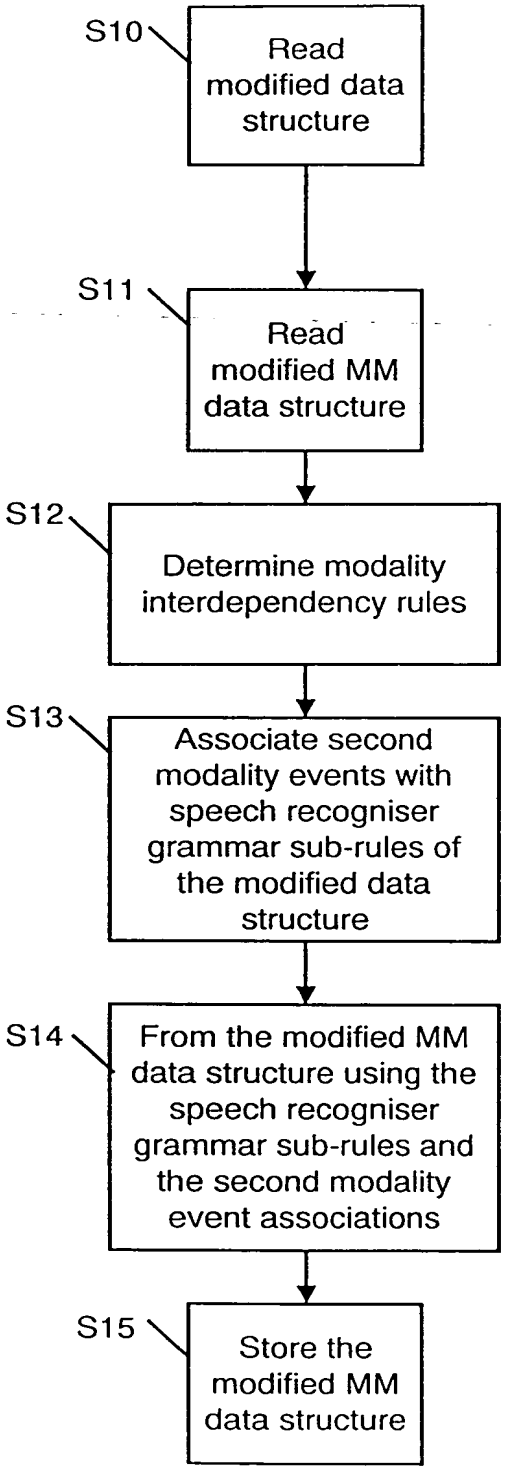


FIG. 9

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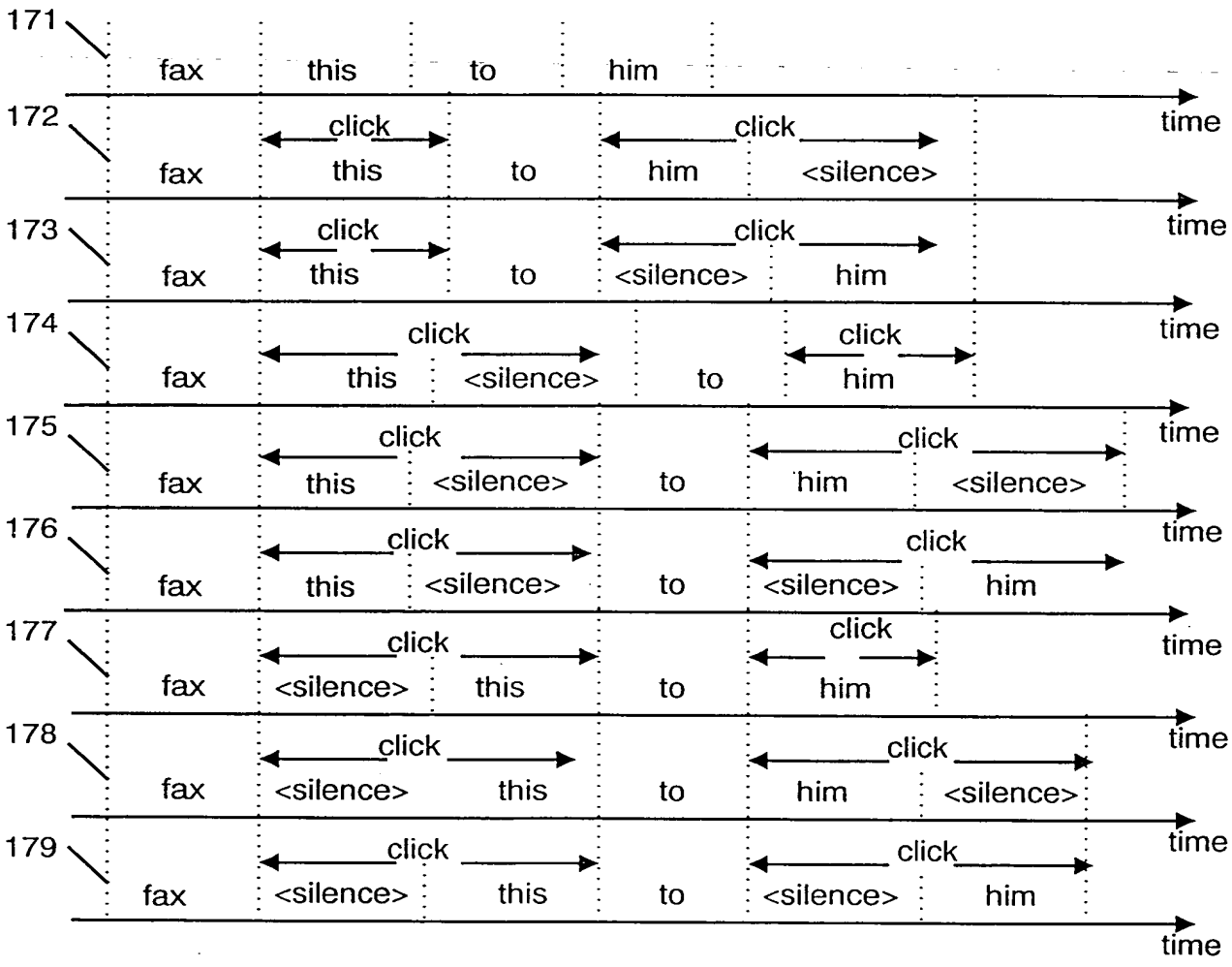
171
fax
this
to
him
time
172
click
click
fax
this
to
him
<silence>
time
173
click
click
fax
this
to
<silence>
him
time
174
click
click
fax
this
<silence>
to
him
time
175
click
click
fax
this
<silence>
to
him
<silence>
time
176
click
click
fax
this
<silence>
to
<silence>
him
time
177
click
click
fax
<silence>
this
to
him
time
178
click
click
fax
<silence>
this
to
him
<silence>
time
179
click
click
fax
<silence>
this
to
<silence>
him
time

FIG. 10

191 <SR sub-rule 1> & (click click)

192 <SR sub-rule 2> & click

193 <SR sub-rule 3> & click

194 <SR sub-rule 4> & click

195 <SR sub-rule 5> & click

196 <SR sub-rule 6> -

197 <SR sub-rule 7> -

198 <SR sub-rule 8> & (click click)

199 <SR sub-rule 9> & click

FIG. 11

09505470.030400

<Modified MM Grammar fax rule> =

<SR sub-rule 1> & (click click)

|(<SR sub-rule 2> & click)(<SR sub-rule 3> & click)

| (<SR sub-rule 4> & click) [(<SR sub-rule 5> & click)| (<SR sub-rule 6> (<SR sub-rule 3> & click))]

|<SR sub-rule 7> [(<SR sub-rule 8> & (click click) | (<SR sub-rule 9> & click) (<SR sub-rule 3> & click)]

FIG. 12

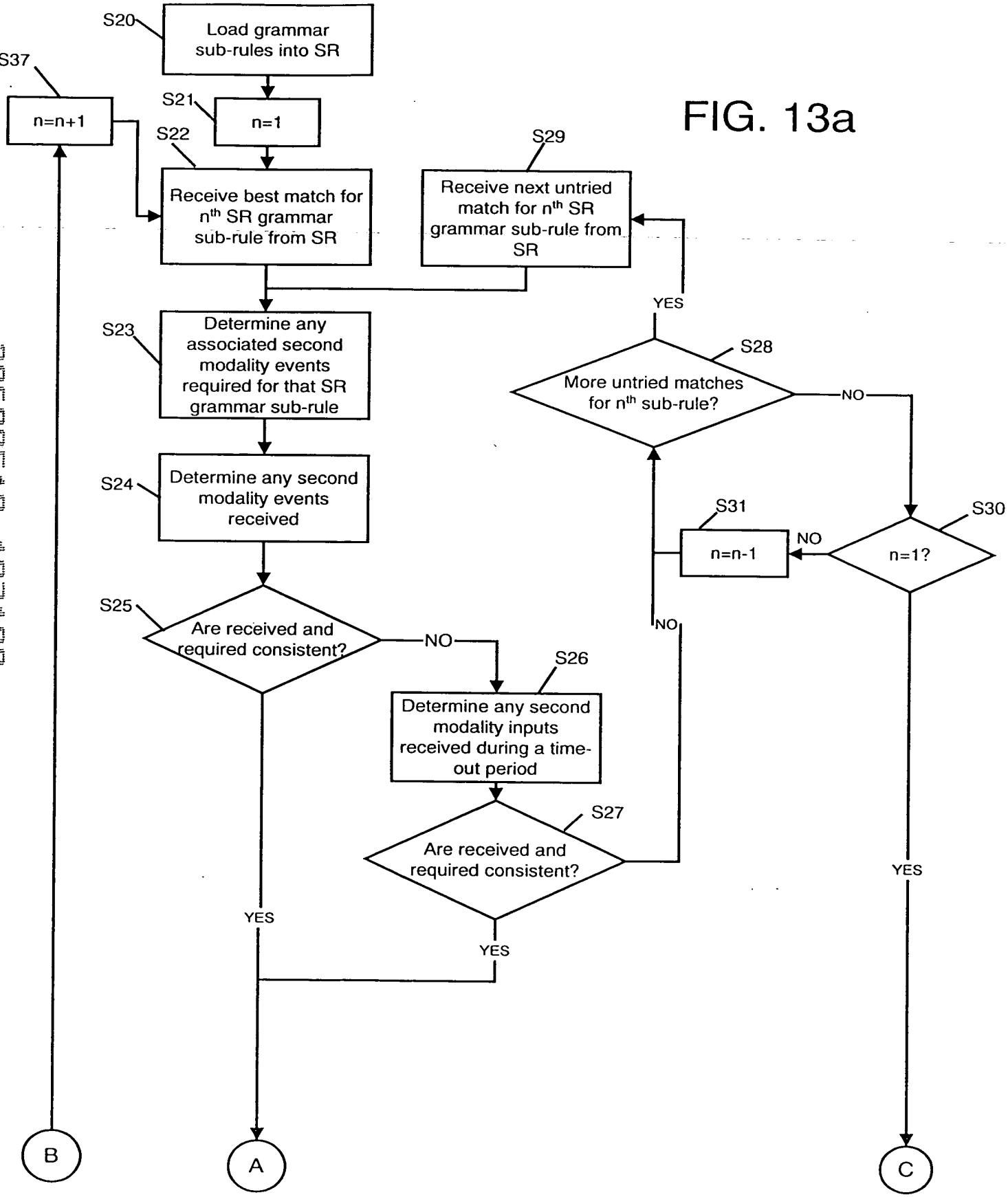
S20
Load grammar sub-rules into SR
S21
n=1
S22
Receive best match for nth SR grammar sub-rule from SR
S23
Determine any associated second modality events required for that SR grammar sub-rule
S24
Determine any second modality events received
S25
Are received and required consistent?
NO
S26
Determine any second modality inputs received during a time-out period
S27
Are received and required consistent?
YES
YES
YES
S28
More untried matches for nth sub-rule?
NO
YES
S29
Receive next untried match for nth SR grammar sub-rule from SR
S30
n=1?
NO
S31
n=n-1
NO
S37
n=n+1
A
B
C

FIG. 13a

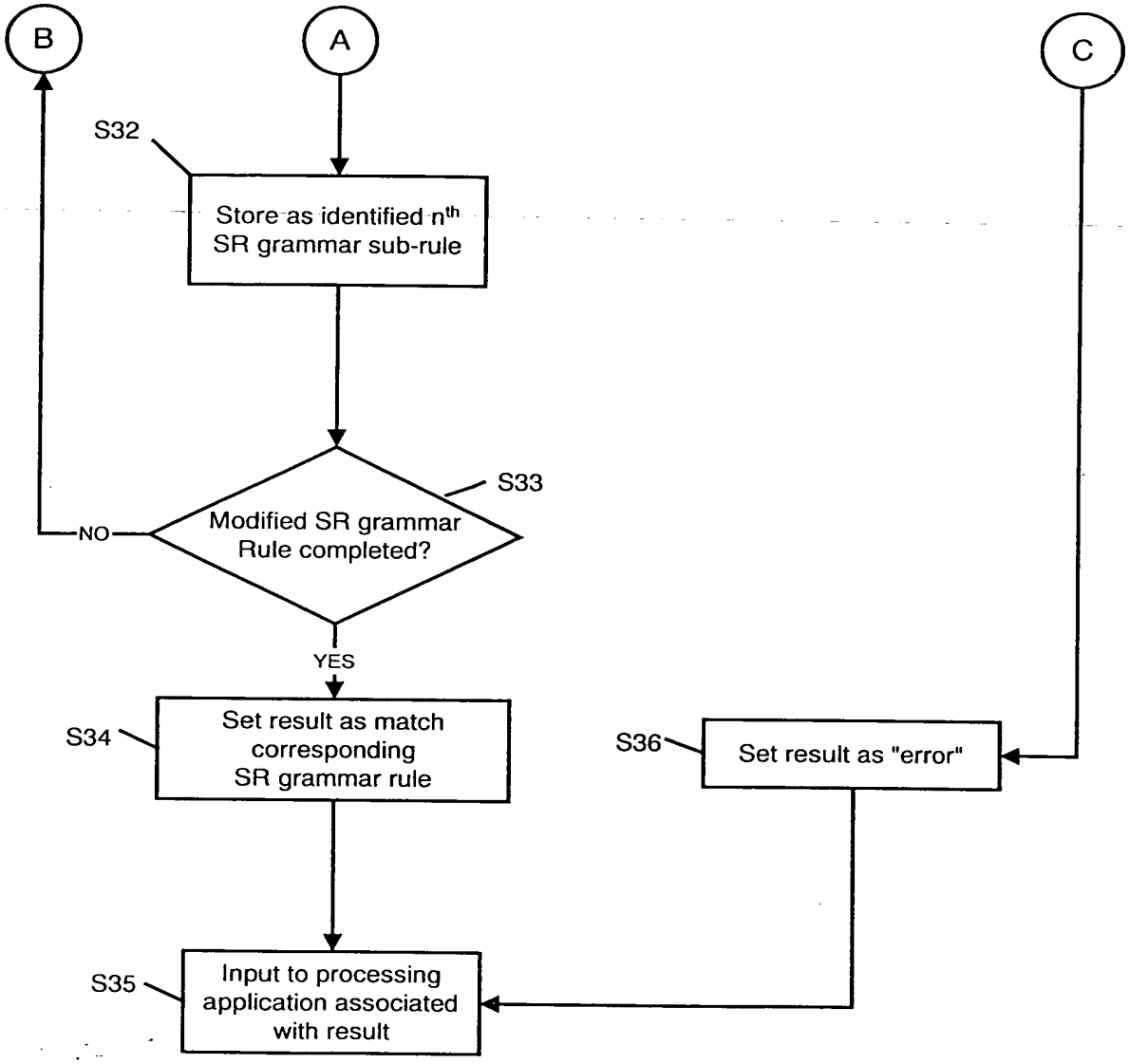
B
A
C
S32
Store as identified nth SR grammar sub-rule
S33
Modified SR grammar Rule completed?
NO
YES
S34
Set result as match corresponding SR grammar rule
S36
Set result as "error"
S35
Input to processing application associated with result

FIG.13b

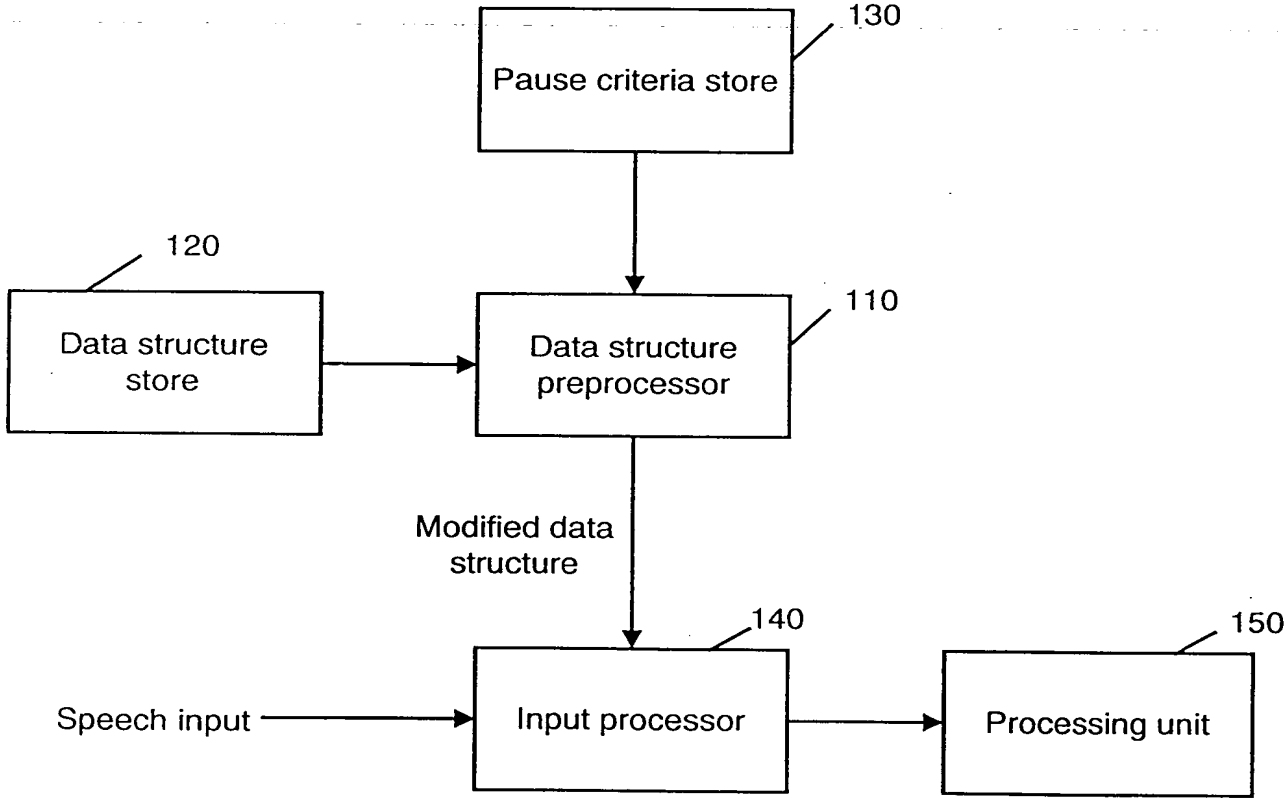
Pause criteria store
130
120
Data structure store
Data structure preprocessor
110
Modified data structure
140
150
Speech input
Input processor
Processing unit

FIG. 14

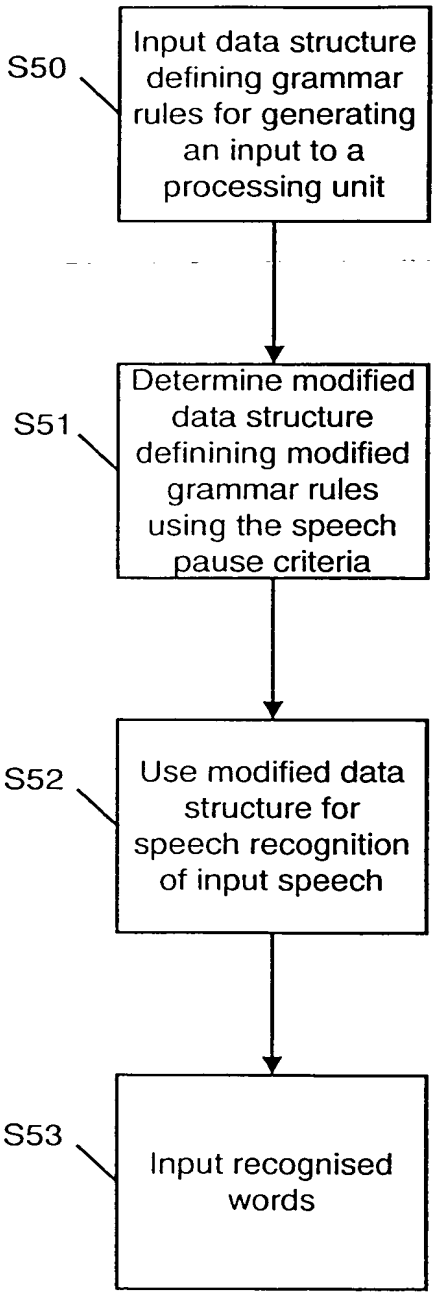

FIG. 15

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